REMARKS

Responsive to the outstanding Office Action, applicant has carefully studied the Examiner's rejections. Claim 20 has been amended to include subject matter of claim 13, and claims 13-19 and 24-25 have been canceled herein. It is respectfully submitted that no new matter has been added to the claims. Favorable reconsideration of the application in light of the following detailed arguments is respectfully requested.

CLAIM OBJECTIONS

Claims 20-24 were objected to for depending from a canceled claim. In response thereto, claim 20 has been amended herein to include subject matter of claim 13 and making this claim properly independent. It is therefore requested that this objection be withdrawn.

REJECTIONS UNDER 35 USC 103

Claims 20-23 were rejected under 35 USC 103 as being unpatentable over Blomgren (US 5,203,406) in view of Ishida (US 6,173,762). The Examiner acknowledges that Blomgren does not teach microchanneling on the plates, but cites the Ishida reference to overcome this deficiency.

Claim 20, as amended herein, defines a device for the recovery of a gaseous phase from a liquid fluid on a commercial scale by at least partial evaporation of the liquid fluid or of at least one of the components contained therein or by setting free one of the components formed by thermal transition of the liquid fluid. The device comprises a modular falling-film evaporator consisting of stacked vertical or inclined plate-type

modules. The device comprises a modular falling film evaporator containing at least one stack of vertical or inclined plate-type modules, at least every other module featuring one or several spaces through which a heat exchange fluid can flow, and gap-shaped evaporation chambers between the side surfaces of essentially equal-sized rectangular modules, with the surfaces facing each other. The evaporator modules feature a set of parallel micro-channels on at least one side facing the gap-type evaporation chambers, the orientation of the micro-channels corresponding to the direction of the liquid fluid stream flowing therein by gravity and/or capillary forces, and a device for feeding a liquid fluid into the micro-channels, the gap-type evaporation chambers being open at the top and/or bottom essentially over the entire width of the module, and that at least one stack being arranged in a vessel equipped with a device for withdrawing a gas phase and a device for withdrawing a liquid phase.

Amended claim 20 defines "gap-shaped evaporation chambers between the side surfaces of essentially equal sized evaporation modules." This feature of the present invention overcomes a known problem in current systems as discussed in paragraph [0006] of the present application, specifically avoiding film interruptions, dry running and undesirable hot spots, all of which known systems are subject to. These can produce undesirable decomposition phenomena when concentrating a liquid that contains a thermolabile component. To address this issue requires that the gap-shaped evaporation chambers between the side surfaces have surprisingly been found to require essentially equal-sized rectangular shape, as defined and claimed herein.

Figures 4 and 6 of the primary reference clearly show that the gap-type evaporation chambers are not of equal size, or essentially equal size. It would not be

obvious to one skilled in the art to change the dimensions of these chambers so that reaction chambers are essentially equal sized to gap-type reaction chambers, to avoid the above noted issues. The Blomgren reference does not even address this issue, which is to supply desalinated sea water from sea water, and to provide a device which does not prevent heat emitting vapor to flow into the condensation spaces from above through slots formed between the upper edges of the heat transferring plates (Blomgren, col 1, lines 40-43). There is absolutely no suggestion in this reference that the use of gap-type evaporation chambers of essentially equal size would have any purpose in the invention as described therein.

The Ishida reference fails to overcome this deficiency of the Blomgren reference. Ishida teaches construction of a groove containing tube body with preferred height in the range of 0.2 to 0.8 mm (column 3, lines 1-7). In Ishida, this is used to insure sufficient wetting and spreading of the refrigerant. Again, there is nothing in this reference to teach or suggest to one skilled in the art that gap-type evaporation chambers of essentially equal-sized rectangular shapes would serve any particular purpose. One skilled in the art would not see the utility of constructing microchannels with width of 50 to 500 μm from these references.

It is also submitted that the construction of the device of Blomgren differs considerably from the device of Ishida. It is respectfully submitted that one skilled in the relevant art would not be motivated to look at these 2 disparate references as a combination to address the issues addressed by the present application.

It is further submitted that in order to achieve the purpose of the present invention, the use of a liquid fluid stream driven by gravity or capillary forces is

essential. One skilled in the relevant art would recognize that the reaction chambers must be constructed in such a manner as to allow the fluid transported particularly by capillary forces, as most fluid allow no further transportation unless the dimensions of the reaction chamber are designed with this purpose in mind.

In view of the above, it is respectfully submitted that claim 20 is allowable over the applied art of record. Claims 21-23, which depend directly or indirectly from claim 20, are believed to be allowable based, at least, upon this dependence.

SUMMARY

It is believe that the above amendments place the application in condition for allowance. Should the Examiner wish to modify the application in any way, applicant's attorney suggests a telephone interview in order to expedite the prosecution of the application.

Respectfully submitted,

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